

In re: Declan McDonagh et al.

Serial No.: 10/649,493

Filed: August 27, 2003

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REMARKS

Applicants appreciate the detailed examination evidenced by the Office Action mailed March 9, 2005 (hereinafter "Office Action"), and the indication that Claims 3-7, 9, 11-13, 15 and 18-20 recite patentable subject matter. Applicants have amended Claim 17 to correct the dependency error noted in the Office Action. Applicants respectfully request reconsideration and withdrawal of the rejections of Claims 1, 2, 8, 10, 14, 16, 17 and 21 based on U.S. Patent No. 6,114,920 to Moon (hereinafter "Moon").

Claim 1 recites:

A phase locked loop (PLL) circuit, comprising:

a controlled oscillator circuit operative to generate an output clock signal responsive to an oscillator control signal according to a plurality of selectable transfer functions;

an oscillator control signal generator circuit that generates *the oscillator control signal* responsive to the output clock signal and a reference clock signal; and

a transfer function control circuit operative to transition operation of the controlled oscillator from a first one of the transfer functions to a second one of the transfer functions responsive to *the oscillator control signal*.

In rejecting Claim 1, the Office Action appears to assert that FIG. 3 of Moon and the accompanying description thereof teach all of the recitations of Claim 1 except "calling the oscillation signal F_OSC a 'clock signal.'" Office Action, p. 3. In particular, the Office Action equates the VCO 308 of FIG. 3 of Moon with the recited "controlled oscillator circuit" and the state machine 316 with the recited "transfer function control circuit." Applicants respectfully disagree with this characterization of Moon, and submit that Moon fails to disclose or suggest several of the recitations of Claim 1 and the other independent claims.

As recited in Claim 1, in transitioning operation of the controlled oscillator between transfer functions, the transfer function control circuit and the controlled oscillator circuit are *both* responsive to the oscillator control signal. As noted in the present application, this allows for dynamic adjustment of the transfer function of the controlled oscillator circuit, without requiring a "calibration" or "auto-trim" operation

in which the oscillator is decoupled. For example, in embodiments of the present invention described with reference to FIG. 4, graceful transition between transfer functions may be implemented responsive to the loop filter voltage while the loop is in operation. *See Present Application, p. 6.*

In sharp contrast, Moon describes a circuit (shown in FIG. 3) that adjusts the operating curve of a VCO 308 in an "off-line" auto-trim mode in which the state machine 316 receives a loop filter voltage V_{LF} while the VCO 308 is decoupled from the loop filter 106 and receives a reference voltage V_{REF} . Consequently, in this auto trim mode, the VCO 308 and the state machine 316 operate responsive to *different* signals. This is a similar approach to that of U.S. Patent No. 5,942,949 to Wilson et al., which is discussed in the Background of the Invention section of the present application. Accordingly, Moon neither discloses nor suggests the all of the recitations of Claim 1 and, for at least this reason, Applicants submit that Claim 1 is patentable over Moon. At least similar reasons support the patentability of independent Claims 10 and 16 over Moon. Applicants, therefore, request withdrawal of the rejections of these claims.

Applicants submit that dependent Claims 2-9, 11-15 and 17-21 are patentable at least by virtue of the patentability of the various ones of independent Claims 1, 10 and 16 from which they depend. Applicants further submit that several of the dependent claims have additional independent bases for patentability, including the Claims 3-7, 9, 11-13, 15 and 18-20, indicated as being separately patentable in the Office Action.

Conclusion

Applicants submit that the rejections of the claims are overcome for at least the reasons discussed above, and that the claims are, therefore, in condition for allowance, which is respectfully requested. Applicants encourage the Examiner to contact the undersigned by telephone to resolve any remaining issues.

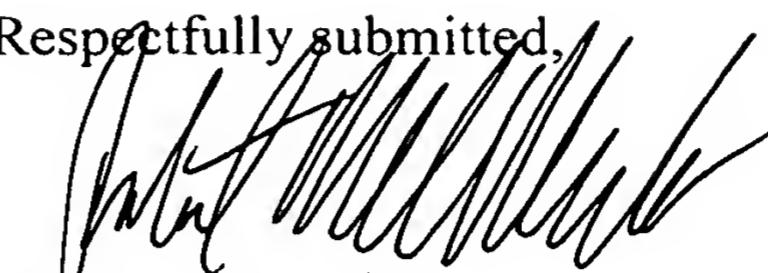
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